

WHAT IS CLAIMED IS:

- 1 1. A method for determining differences in at least a part of sets of candidate
2 configuration information, comprising:
 - 3 a) accepting at least a part of a selected one of at least one set of
4 configuration information for a data forwarding device;
 - 5 b) accepting at least a part of a set of candidate configuration information
6 for the data forwarding device; and
 - 7 c) determining differences, if any, between
 - 8 - the at least the part of the set of candidate configuration
9 information for the data forwarding device, and
 - 10 - the at least the part of the selected one of the at least one set of
11 configuration information for the data forwarding device.
- 1 2. The method of claim 1 wherein the selected one of at least one set of
2 configuration information for a data forwarding device is a most recently
3 committed set of configuration information for the data forwarding device.
- 1 3. The method of claim 1 wherein the selected one of at least one set of
2 configuration information for a data forwarding device is selected by a user.
- 1 4. The method of claim 1 wherein the set of candidate configuration information
2 for the data forwarding device includes a plurality of statements,
 - 3 wherein a first statement of the plurality of statements of the set of
4 candidate configuration information for the data forwarding device contains a
5 second statement of the plurality of statements to define at least a part of a
6 hierarchical configuration,
 - 7 wherein the selected one of the at least one set of configuration
8 information for the data forwarding device includes a plurality of statements, and
9 wherein a first statement of the plurality of statements of the
10 selected one of the at least one set of configuration information for the data

11 forwarding device contains a second statement of the plurality of statements to
12 define at least a part of a hierarchical configuration.

1 5. The method of claim 4 wherein the at least the part of the set of candidate
2 configuration information only includes a defined first statement and any of the
3 plurality of statements that are descendants of the defined first statement in the
4 hierarchical configuration, and

5 wherein the at least the part of the selected one of the at least one
6 set of configuration information includes a corresponding first statement and any
7 of the plurality of statements that are descendants of the defined first statement
8 in the hierarchical configuration.

1 6. The method of claim 5 wherein the defined first statement is defined based on
2 a statement of the hierarchical candidate configuration information on which a
3 user is presently working.

1 7. The method of claim 5 wherein the defined first statement is defined by a user
2 input.

1 8. The method of claim 4 wherein the hierarchical configuration information
2 includes at least two categories at a first hierarchical level, and
3 wherein the at least two categories are selected from a group of
4 data forwarding device configuration categories consisting of:

- 5 A) chassis configuration information;
- 6 B) class-of-service configuration information;
- 7 C) firewall configuration information;
- 8 D) forwarding-options configuration information;
- 9 E) groups configuration information;
- 10 F) interfaces configuration information;
- 11 G) policy-options configuration information;
- 12 H) protocols configuration information;

- 13 I) routing-instances configuration information;
- 14 J) routing-options configuration information;
- 15 K) network management protocol configuration information; and
- 16 L) system configuration information.

1 9. The method of claim 4 wherein the hierarchical configuration information
2 includes at least two categories at a given hierarchical level, the method further
3 comprising:

- 4 d) associating a predetermined permission value with a user that is
- 5 logged in; and
- 6 e) determining whether the logged in user is permitted to access one of
- 7 the at least two categories of configuration information based on the
- 8 predetermined permission.

1 10. The method of claim 1 wherein the act of accepting at least a part of a
2 selected one of at least one set of configuration information for a data forwarding
3 device is performed by accessing a storage device of the data forwarding device,
4 wherein the act of accepting at least a part of a set of candidate
5 configuration information for the data forwarding device is performed by
6 accessing a storage device of the data forwarding device; and
7 wherein the act of determining differences, if any, between
8 - the at least the part of the set of candidate configuration
9 information for the data forwarding device, and
10 - the at least the part of the selected one of the at least one set of
11 configuration information for the data forwarding device,
12 is performed by a component of the data forwarding device.

1 11. The method of claim 1 wherein the set of candidate configuration information
2 for the data forwarding device includes a plurality of statements, at least some of
3 which define parameter values,

wherein the selected one of the at least one set of configuration information for the data forwarding device includes a plurality of statements, at least some of which define parameter values, and

wherein the act of determining differences, if any, between

- the at least the part of the set of candidate configuration information for the data forwarding device, and
- the at least the part of the selected one of the at least one set of configuration information for the data forwarding device,

considers a selected one of (a) statements only, (b) parameter values only, and (c) statements and parameter values.

12. A machine readable medium having stored thereon:

- a) at least a part of a set of candidate configuration information for the data forwarding device; and
- b) indicators for indicating differences between
 - the at least a part of the set of candidate configuration information for the data forwarding device, and
 - at least a part of a selected one of at least one set of configuration information for the data forwarding device.

13. In a data forwarding device, a facility for checking at least a part of a set of candidate configuration information, the facility comprising:

- a) a storage device for storing at least one set of configuration information for the data forwarding device;
- b) an input facility for
 - i) accepting at least a part of a selected one of the at least one set of configuration information for a data forwarding device, and
 - ii) accepting at least a part of a set of candidate configuration information for the data forwarding device; and

- 10 c) a configuration comparison facility for determining differences, if any,
11 between
12 - the at least the part of the set of candidate configuration
13 information for the data forwarding device, and
14 - the at least the part of the selected one of the at least one set of
15 configuration information for the data forwarding device.

- 1 14. A method for determining differences in at least a part of sets of
2 configuration information, comprising:
3 a) accepting at least a part of a first selected one of at least two sets of
4 configuration information for a data forwarding device;
5 b) accepting at least a part of a second selected one of the at least two
6 sets of configuration information for the data forwarding device; and
7 c) determining differences, if any, between
8 - the first selected one of the at least two sets of configuration
9 information for a data forwarding device, and
10 - the second selected one of the at least two sets of configuration
11 information for a data forwarding device.

- 1 15. The method of claim 14 wherein the first selected one of the at least two sets
2 of configuration information for a data forwarding device includes a plurality of
3 statements,
4 wherein a first statement of the plurality of statements of the first
5 selected one of the at least two sets of configuration information for a data
6 forwarding device contains a second statement of the plurality of statements to
7 define at least a part of a hierarchical configuration,
8 wherein the second selected one of the at least two sets of
9 configuration information for a data forwarding device includes a plurality of
10 statements, and
11 wherein a first statement of the plurality of statements of the second
12 selected one of the at least two sets of configuration information for a data

13 forwarding device contains a second statement of the plurality of statements to
14 define at least a part of a hierarchical configuration.

1 16. The method of claim 15 wherein the at least the part of the first selected one
2 of the at least two sets of configuration information for a data forwarding device
3 only includes a defined first statement and any of the plurality of statements that
4 are descendants of the defined first statement in the hierarchical configuration,
5 and

6 wherein the at least the part of the second selected one of the at
7 least two sets of configuration information for a data forwarding device includes a
8 corresponding first statement and any of the plurality of statements that are
9 descendants of the defined first statement in the hierarchical configuration.

1 17. The method of claim 16 wherein the defined first statement is defined by a
2 user input.

1 18. The method of claim 15 wherein the hierarchical configuration information
2 includes at least two categories at a first hierarchical level, and

3 wherein the at least two categories are selected from a group of
4 data forwarding device configuration categories consisting of:

- 5 A) chassis configuration information;
- 6 B) class-of-service configuration information;
- 7 C) firewall configuration information;
- 8 D) forwarding-options configuration information;
- 9 E) groups configuration information;
- 10 F) interfaces configuration information;
- 11 G) policy-options configuration information;
- 12 H) protocols configuration information;
- 13 I) routing-instances configuration information;
- 14 J) routing-options configuration information;
- 15 K) network management protocol configuration information; and

16 L) system configuration information.

1 19. The method of claim 14 wherein the act of accepting at least a part of the
2 first selected one of the at least two sets of configuration information for the data
3 forwarding device is performed by accessing a storage device of the data
4 forwarding device,

5 wherein the act of accepting at least a part of the second selected
6 one of the at least two sets of configuration information for the data forwarding
7 device is performed by accessing a storage device of the data forwarding device,
8 and

9 wherein the act of determining differences, if any, between
10 - the first selected one of the at least two sets of
11 configuration information for the data forwarding device, and
12 - the second selected one of the at least two sets of
13 configuration information for the data forwarding device,
14 is performed by a component of the data forwarding device.

1 20. The method of claim 14 wherein the first selected one of the at least two sets
2 of configuration information for a data forwarding device includes a plurality of
3 statements, at least some of which define parameter values,

4 wherein the second selected one of the at least two sets of
5 configuration information for the data forwarding device includes a plurality of
6 statements, at least some of which define parameter values, and

7 wherein the act of determining differences, if any, between
8 - the first selected one of the at least two sets of
9 configuration information for the data forwarding device, and
10 - the second selected one of the at least two sets of
11 configuration information for the data forwarding device,
12 considers a selected one of (a) statements only, (b) parameter values only, and
13 (c) statements and parameter values.

- 1 21. A machine readable medium having stored thereon:
2 a) at least two sets of configuration information for a data forwarding
3 device; and
4 b) indicators for indicating differences between
5 - a first selected one of the at least two sets of configuration
6 information for the data forwarding device, and
7 - a second selected one of the at least two sets of configuration
8 information for the data forwarding device.
- 1 22. In a data forwarding device, a facility for comparing at least a part of sets of
2 configuration information, the facility comprising:
3 a) a storage device for storing at least two sets of configuration
4 information for the data forwarding device;
5 b) an input facility for
6 i) accepting at least a part of a first selected one of the at least two
7 sets of configuration information for the data forwarding device, and
8 ii) accepting at least a part of a second selected one of the at least
9 two sets of configuration information for the data forwarding device;
10 and
11 c) a configuration comparison facility for determining differences, if any,
12 between
13 - the first selected one of the at least two sets of configuration
14 information for the data forwarding device, and
15 - the second selected one of the at least two sets of configuration
16 information for the data forwarding device.
- 1 23. A method comprising:
2 receiving with a data forwarding device, a first set of configuration
3 information for the data forwarding device;
4 receiving with the data forwarding device, a second set of configuration
5 information for the data forwarding device;

6 determining with the data forwarding device, differences between the first
7 and second sets of configuration information.

1 24. The method according to claim 23, wherein the data forwarding device is a
2 router.

1 25. A data forwarding device comprising:
2 a memory storing a first set of configuration information and a second set
3 of configuration information for the data forwarding device;
4 a processing module for determining differences between the first and
5 second sets of configuration information stored in the memory.

26. A data forwarding device comprising:

- a plurality of data interfaces for connection to respective data lines;
- a mechanism for forwarding data from one data interface to another data interface;
- a user interface for entering configuration information;
- a memory storing a first set of configuration information and a second set of configuration information;
- a processing module for determining differences between the first and second sets of configuration information stored in the memory.